Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

DRAFT
Conditional Major / Operating
Permit: F-08-018
Bakery Feeds
Henderson, Kentucky 42420
July 21, 2008
Esmail Hassanpour, Reviewer

SOURCE ID:	21-101-00119
AGENCY INTEREST:	38442
ACTIVITY:	APE20080001

SOURCE DESCRIPTION:

Bakery Feeds applied to the Kentucky Division for Air Quality on April 16, 2008, to renew their current permit (F-03-008) in Henderson, KY. Bakery Feeds recycles waste bakery products consisting of cookies, crackers, cereals, breads, snack foods, dough, and similar products at Henderson, Kentucky. These materials are brought into the plant by tractor trailer and off-loaded inside the building directly onto the receiving floor. They are then blended using mobile equipment and moved to a staging area. The same mobile equipment then loads the product into the receiving hopper.

Raw materials are transferred from the receiving hopper to a hammermill to reduce the size of the materials to facilitate uniform drying of the product. Raw materials are moved from the hammermill by conveyor to a ten foot diameter by fifty foot long rotating drum dryer. The dryer reduces the moisture content of the raw materials. Product is moved through the dryer by tumbling action and by the movement of air pulled through the dryer, the drop out box at the end of the dryer and a product recovery cyclone by the induced air fan. All material removed in the drop box and the cyclone is put back into the process. All air is discharged through a stack immediately downstream of the fan.

Dried raw materials are conveyed to vibrating screens used to size the product and recover the packaging materials. Finished product passing through the screens is moved by covered screw conveyor to storage. Packaging materials are pneumatically removed from the screen, mixed with sawdust and fed into a hammermill for a final size reduction before being sent to the biomass burner to be used as fuel. The finished product that cannot pass through the vibrating screen is directed to a finishing mill for size reduction. Product is returned to the screen after the finishing mill to be resized. This cycle continues until the entire product passes through the screen and is placed into storage.

Finished product is finally moved from storage to the truck loading area where it is loaded onto trucks for delivery. Truck loading is conducted inside the building to minimize fugitive emissions. The biomass burner generates heat for the drying process by burning sawdust mixed with shredded packaging materials. Heat and products of combustion are pulled from the burner, through the dryer, the drop box and the dryer cyclone by the dryer exhaust fan. The fan then discharges this air by way of the 150 foot tall exhaust stack. The source is adding a potash transfer operation with emission of particulate matter less than five tons per year to the insignificant activity list in Section C of the permit.

APPLICABLE REGULATIONS AND EMISSION UNITS:

401 KAR 59:010, new process operations, applicable to each affected facility or source, associated with a process operation commenced on or after July 2, 1975.

401 KAR 59:020, New incinerators, applicable for incinerators commenced after June 6, 1979 with a charging rate of fifty tons/day or less.

EMISSION UNITS 02:

Pursuant to 401 KAR 59:020, Section 3(2)(a), particulate matter emissions from the CCG unit shall not exceed 0.23 g/dscm (0.1 gr/dscf) corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

Pursuant to 401 KAR 59:010, particulate matter emissions from the process shall not exceed $[3.59(P)^{0.62}]$ pounds per hour based on a three hour average where P is the hourly operating rate in tons per hour.

Pursuant to 401 KAR 59:020, Section 3(1), visible emissions shall not exceed twenty (20) percent opacity based on a six-minute average.

Pursuant to 401 KAR 52:030, Section 26, the permittee shall perform a qualitative visual observation of the opacity of emissions on a weekly basis and maintain a log of the observations. If visible emissions from any stack are seen, then the opacity shall be determined by EPA Reference Method 9 and if the opacity reading is greater than 20 percent, then initiate an inspection of the equipment for any repair.

The permittee shall monitor amounts of yeast containing dough, bakers' percent of yeast, and proof time. The permittee shall calculate and record the monthly VOC emissions. The VOC emissions from the rotary dryer shall be determined based on emission factors derived from the equation given in "Alternative Control Technology Documents for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992):

VOC E.F. = $0.95Y_i+0.195t_1+1.90$

Where,

VOC E.F. = Emission factor in pounds of VOC per ton of yeast containing dough processed

Y_I = Initial baker's percent of yeast to the nearest tenth of a percent

t_I = Total yeast action time in hours to the nearest tenth of an hour (Customer proof time + Bakery Feeds proof time)

VOC Emissions (tons/yr) = VOC E.F. x BP x .0005

Where,

BP = Yeast containing dough processed in tons/year

The permittee shall monitor the amount of scrap packaging and sawdust used in the CCG unit and the hours of operation on a daily basis.

VOC emissions from the dryer fuel shall be calculated using the following formula:

[(0.17lb/ton dryer fuel) multiplied by the dryer fuel usage rate]

EMISSION AND OPERATING CAPS DESCRIPTION:

Volatile organic compounds (VOC(s)) emissions shall not exceed 90 tons per year on a twelve-month rolling total to preclude the applicability of 401 KAR 51:012 and 401 KAR 52:020. The 90 ton per year VOC limit will prevent the bakery scrap drying from being considered a major source.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.